

Institut
Pierre
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CarboCount – Carbon Monitoring and Verification



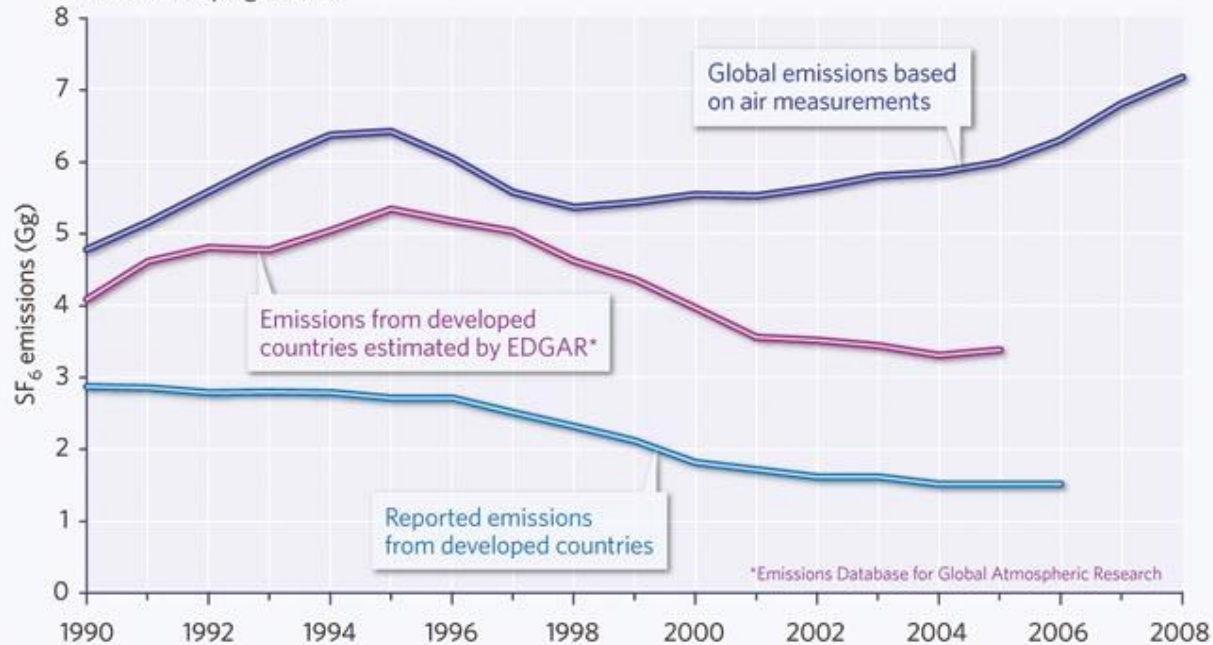
CarboCount - Context

- CarboCount is a project proposed within the context of the KIC Climate.
- EU-funded initiative aiming to support and promote Research and Innovation projects and assist them in their transfer into commercial products.
- «...with a clear focus on delivering substantial real-world impacts in terms of climate-change adaptation and mitigation »

The need for verification

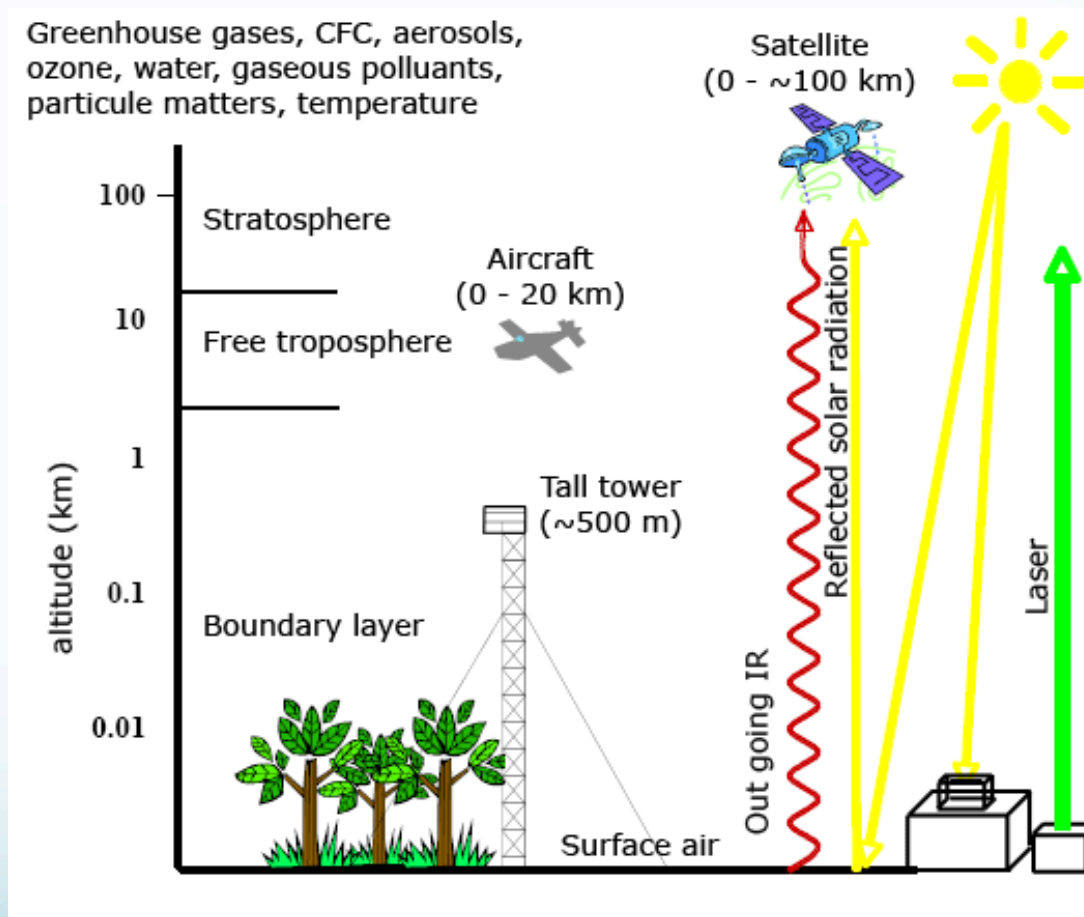
KEEPING TABS ON A GREENHOUSE GAS

Developed countries may be reporting only about half of their emissions of sulphur hexafluoride (SF_6), a potent greenhouse gas. Much of the recent global increase may be due to rising emissions from developing nations.



“independent estimates suggest that the total reported emissions for some gases may be off by more than 50%” Nature 5th May 2010

Atmospheric Monitoring



CarboCount


- Objectives
- To create a valuable, commercial tool for use in the efforts to reduce carbon emissions.
 - Sub-Objectives
 - Providing better understanding of emissions at a national/ regional/ municipal/ local level
 - Expanding the data inputs available (more stations, instruments, species)
 - Attributing emissions to specific sources and local effects.

Market Value

- Market value creates commercial value.
- It is defined in terms of CUSTOMER BENEFIT.
- Elements contributing to market value are:
 1. Benefits provided by the product (range and scope).
 2. Market size i.e. number of identified users and their need for the product.
 3. Availability of alternative products providing the same benefits
 4. Cost of providing the product

Market Value for CarboCount

Current Situation:

- Market value is LOW due to:
 1. Data analysis and collection to date for scientific rather than commercial purposes
 2. Lack of mandatory emission reduction  low demand, few users
 - Preference for investment in efforts with PR potential rather than independent verification
 3. Few alternatives available
 4. High cost of sensors due to low demand and few suppliers

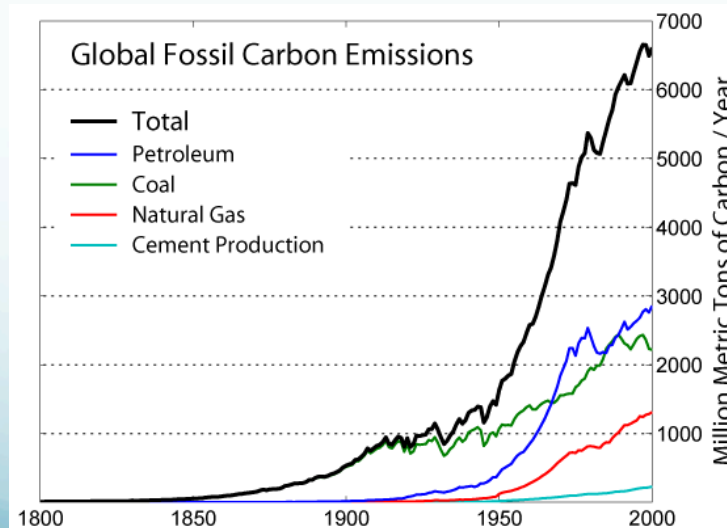
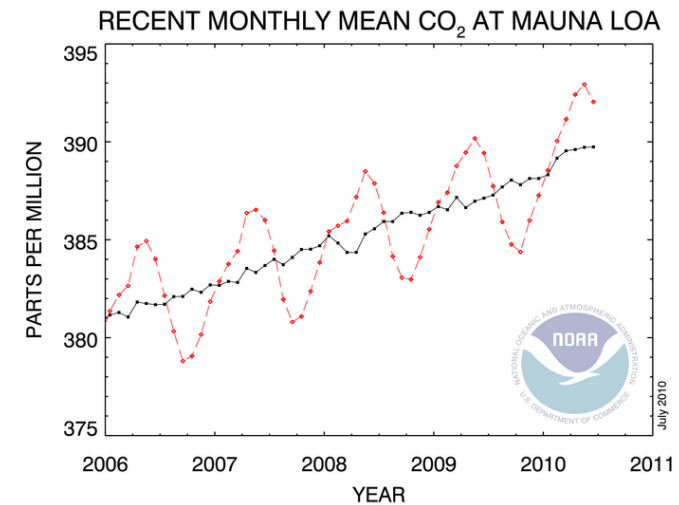
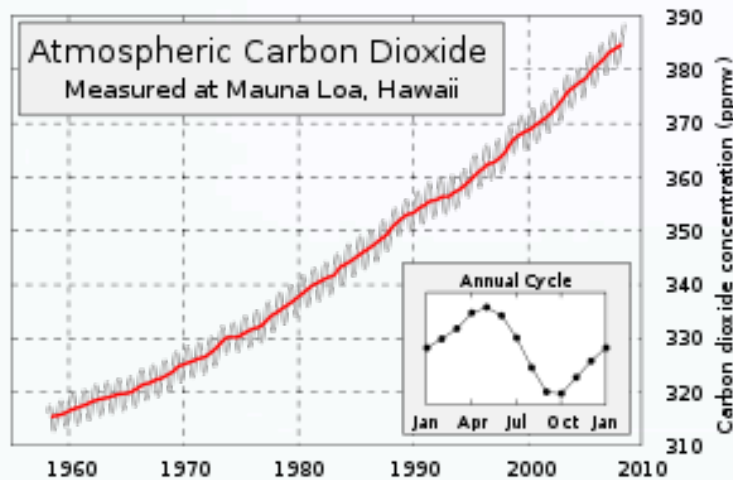
Market Value for CarboCount – Future Scenarios

1. Data availability

- Location of Stations
 - Remote vs Urban
 - Global vs Regional
- CDIAC 30.2bn tonnes CO₂ in 2006 (6-10% uncertainty g)
- Expand monitoring networks
 - NOAA – US 150 stations, ICOS – 50 stations to integrate + 20 new
- More attribution analysis efforts – e.g. presence of isotope Carbon 14
- Satellite data
 - Gosat (Japanese); NASA: OCO new satellite in 2013, France: Microcarb
- Range of species. CO₂ accounts for 70-80% of anthropogenic GHG. Methane, nitrous oxide and others.



A market at a turning point



Need for mandatory legislation as emissions continue to climb...

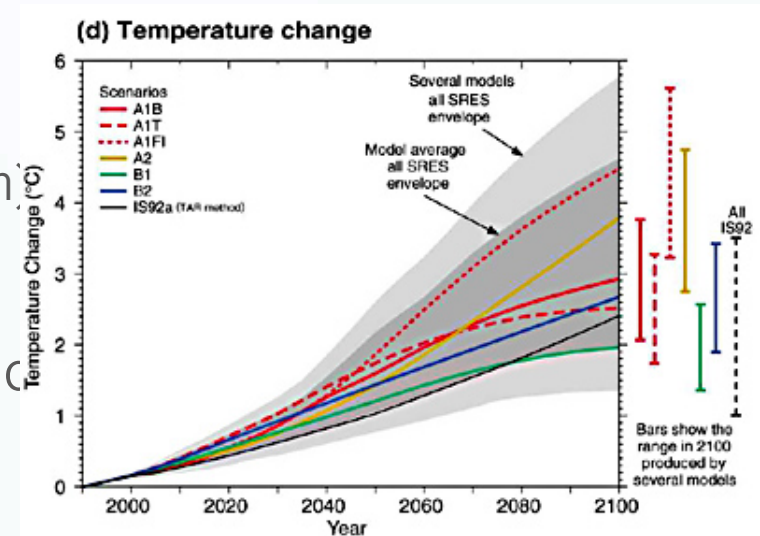
Market Value for CarboCount – Future Scenarios

2. Mandatory Legislation

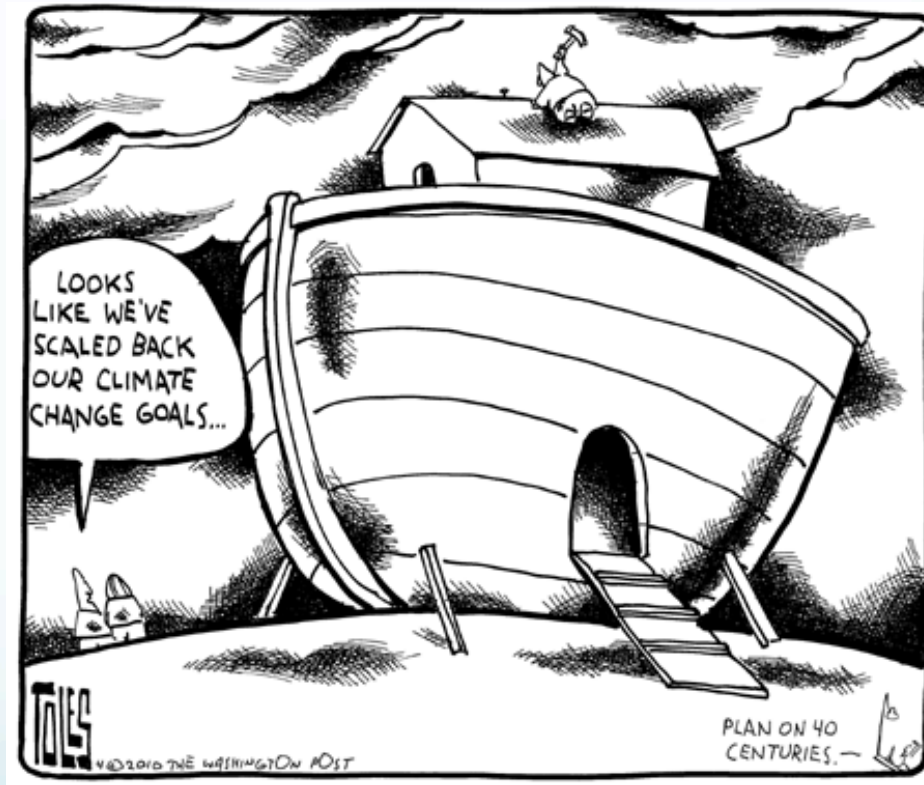
- MRV (Monitoring, Reporting, Verification)
 - Key issue at COP15
- Need for Reliability and Independance
 - Tendancy to report low emissions



- Types of legislation chosen – Taxes, Offsets, Rationing etc.
- IPCC scenarios – Which will apply?

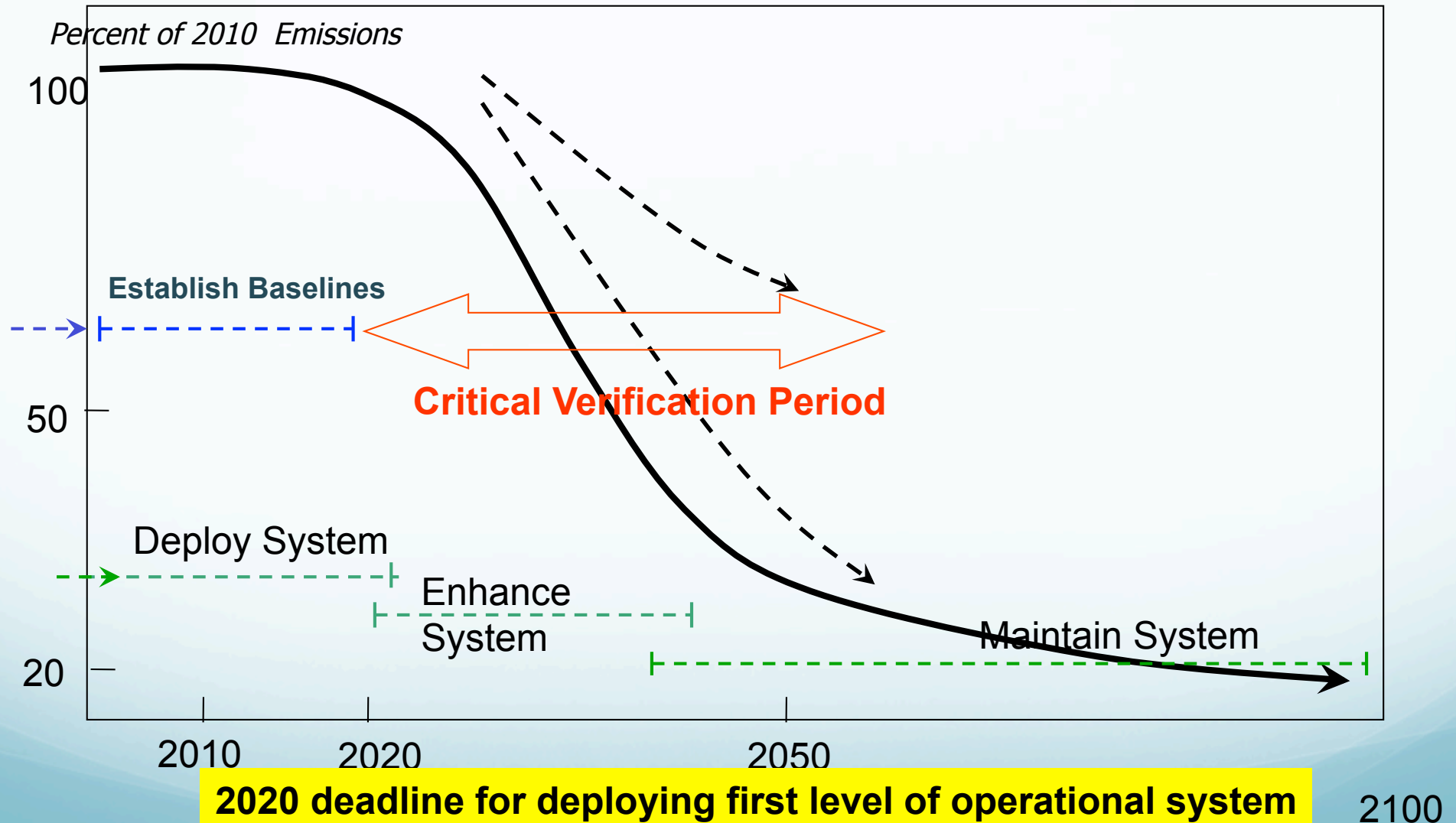


CarboCount –No Legislation?



La vision US : GreenHouse Gas Information System (GHGIS)

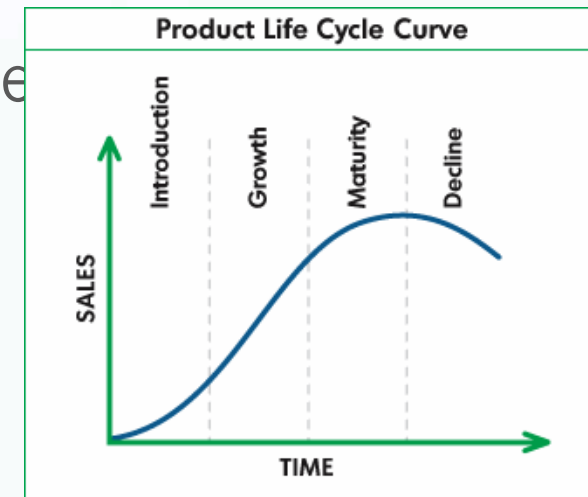
A roadmap to track GHG Emissions Reduction (Courtesy of NOAA)



Market Value for CarboCount – Future Scenarios

3. Competition

- Early stage of market development
- Few competitors but significant funding being invested in US, China, Scandinavia, France and Germany
- Carbosphere – Major project in development
- More competitors will enter as market matures



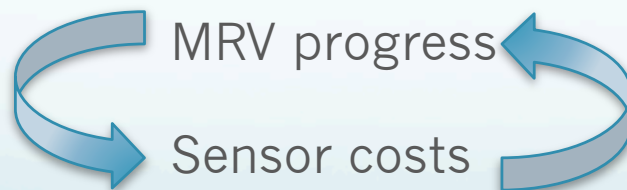
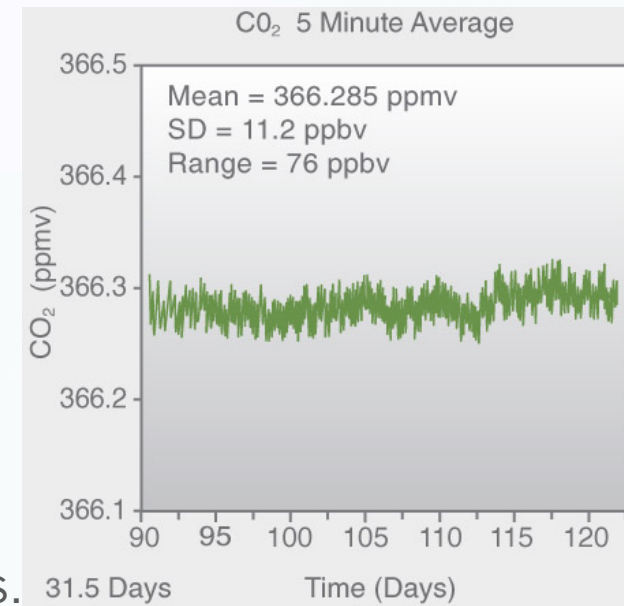
Market Value for CarboCount – Future Scenarios

4. Costs of production

High costs of sensors due to

- Low demand
- Few suppliers (almost monopoly)
- Early in technological dev. process

CarboCount can contribute to reducing costs.



- Labour costs high for analysis – may become more automated

Market Value for CarboCount – Future Scenarios

- **Conclusions**
- Likely that the market will grow but how?
- New needs depending on legislation and scientific progress.
- Need better understanding of market through market research
- Need for continuous back-and-forth communication between scientists and users.

Developing CarboCount

- Detailed information system in the form of well-resolved maps and their variabilities.
 - Track the current distribution of carbon flux
 - Monitor short-term variability and long-term trends in carbon flux
 - Validate simple up-scaling exercises by hard and reliable scientific measurements.
- Using regional test cases – Tool in Practical Application
 - La Forêt des Landes – Largest single forest area in Europe 9000km²
 - Canton of Solothurn, Switzerland – Mix of urban/ agricultural/ forest 2000km²
 - Paris and suburbs- MegaParis 760km² – Intensive urban area